

Sub-Strategy 1.5.2 Review BEES for Cost-Effectiveness:

Confirm that BEES requirements are cost-effective when applied to existing buildings using careful review, industry engagement, and BEES modifications where needed.

Overarching Comment: Energy efficiency cost-effectiveness is measured by comparing the benefits of an investment with the costs. Cost-effectiveness tests are used for energy efficiency program evaluation. Is the lens of cost-effectiveness the appropriate measure to use outside of program evaluation? Consider limiting use of the term within the utility framework, and not using the term in the larger marketplace where cost-effective is only a part of the larger value determination by various stakeholders.

Recommendations:

(Also see APPENDIX 1: RELATED WHPA HVAC ENERGY SAVINGS and DEER COMMITTEE MEETING DISCUSSION for additional comments related to EBEE-AP Sub-Strategy 1.5.2, particularly through the “process requirements” lens.)

From “Process and Product Requirements” LENS

1. Factor the costs of administration and enforcement of standards, the costs of industry installation and compliance, the costs of measurement and verification (M&V), and the costs to clarify market confusion into properly resourcing¹ of pilot programs since stakeholders (consumers, contractors, building departments/budgets) consider these factors important for participation and implementation.
 - Define cost effectiveness for each decision-maker, so that it includes the factors appropriate to measure for that specific stakeholder.

Milestones: Stakeholder cost effectiveness factors identified.

Performance Metrics/Responsible Parties: TBD (WHPA Staff Note: The WHPA HVAC Energy Savings and DEER Committee started development of a cost effectiveness matrix clarifying the factors appropriate to measure for various stakeholders, including residential, nonresidential, owner occupied, tenant/lessee, and public and private decision-makers. Due to re-evaluation of the Committee’s goals, matrix completion is no longer expected in 2016.)

Further Evaluation Recommended: While the above recommendation #1 had consensus approval suggestion from the majority of WHPA stakeholders involved in its development that it be incorporated into Sub-Strategy 1.5.5 as it relates to market behavior, that suggestion was deleted by the Certifying Body stakeholder representative who felt it was a “stand alone” recommendation and not duplicative of other content after reviewing it against other recommendations made by WHPA and in the 2016 Update Plan.

¹ "Proper(ly) source(d)(ing)" means identifying funding to do the action, or properly allocating the funding as required to support the activity.

From “Process and Product Requirements” LENS

2. Write standards that are enforceable, not just cost-effective. Considerations:
 - a. Credibility in Standards requires cost-effectiveness that is visible and tangible to the marketplace.
 - b. Users recognize the “value” of energy efficiency savings and energy efficiency codes.
 - c. Real world standards, not just concepts, need to be written to align closer to what the workforce is actually applying and practicing in the field.
 - d. Standards should align with both new construction and existing retrofits.
 - e. Vet standards through a diversity of market stakeholders, including manufacturers, contractors, and building officials, before approval.

Milestones: TBD

Performance Metrics/Responsible Parties: TBD

Further Evaluation Recommended: While the above recommendation #2 had consensus approval suggestion from the majority of WHPA stakeholders involved in its development that it be partnered with Sub-Strategy 1.5.2 Recommendation #1 above for incorporation into Sub-Strategy 1.5.5, that suggestion was deleted by the Certifying Body stakeholder representative who felt it was a “stand alone” recommendation and not duplicative of other content after reviewing it against other recommendations made by WHPA and in the 2016 Update Plan.

From “Product and Process Requirements” LENS

3. Advertise scale and cost of noncompliance. (*This is also directly applicable to Sub-Strategy 1.5.3.*)
 - Articulate why building efficiency is a health and safety issue within the code, not just "saving energy", so that users recognize the full value of code and energy savings, and to garner Chief Building Official (CBO) support and/or enforcement.

Milestones:

- *Information about health issues and damage to the HVAC industry when you use bad actors, damage to city government when you don't pay for a permit, inability to sell your house without going back and getting a permit, and insurance impacts even if it wasn't about the HVAC unit detailed.*
- *Sub-Strategy 1.5.3 Recommendation ideas for communication, avenues for communication and how to pay for it (Regional hubs) reviewed.*
- *Talking points from facts that HVAC insiders rehash, but that don't get seen outside stakeholder meetings and HVAC association documents defined.*

Performance Metrics/Responsible Parties:

Further Evaluation Recommended: While the above recommendation #3 and its milestones had consensus approval suggestion from the majority of WHPA stakeholders involved in its development that it was appropriately placed with Sub-Strategy 1.5.2, the Certifying Body

stakeholder representative found the content duplicative after reviewing it against other recommendations made by WHPA and in the 2016 Update Plan. Suggestion was subsequently made to partner the recommendation with Sub-Strategy 1.5.3, Recommendation #1 and Sub-Strategy 1.5.5, Recommendation #1.

DRAFT

APPENDIX 1: RELATED WHPA HVAC ENERGY SAVINGS and DEER COMMITTEE MEETING DISCUSSION

While not made directly as input to the above list of recommendations, the following comments related to EBEE-AP Sub-Strategy 1.5.2 were made during the September 9, 2016 WHPA HVAC Energy Savings and DEER Committee meeting. It is recommended that the comments be reviewed to determine relevancy in the WHPA EBEE Committee's continued development of suggested pathways to implementation for the Sub-Strategy focus: "Review BEES for Cost Effectiveness".

The meeting included review of Figure 1: Sub-Strategy 1.5.2 Diagram developed by WHPA ES&DEER Committee Chair Rick Danks (ASHRAE) with the following explanation:

- The blue California graphic represents building energy efficiency standard content from CEC and other governmental agencies being imposed on existing building owners. The arrows above and below are forcing functions. Those going left to right encourage compliance with the energy standards. Those going right to left are viewed as impeding issues. The overall purpose was to get building owners through the dotted arrow on a path toward code compliance. The enforcing functions are not entirely complete, but it is a start.
- In looking at guidance back to the governing bodies and regulators, it struck the author that to account for enforcement and training, unless it is known how much energy it might take to get appropriate training and infrastructure in place, it might be a "zero sum game". While that is beyond the ES&DEER Committee's scope, it is something someone should consider.
- As always, incentives versus costs are returning drivers in return on investment.

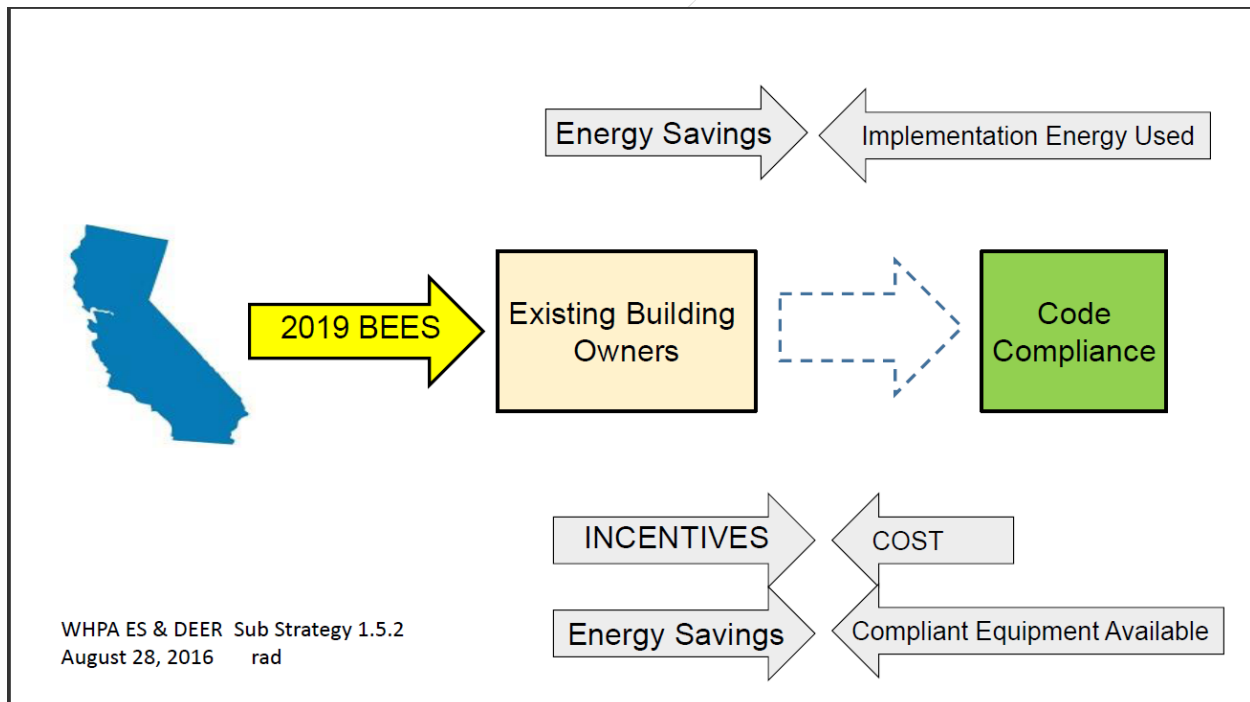


Figure 1: Sub-Strategy 1.5.2 Diagram developed by WHPA ES&DEER Committee Chair Rick Danks (ASHRAE)

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1. Regarding cost effectiveness in relation to AB802, Rick Danks (ASHRAE) commented that it seems to revolve around consumers investing in HVAC replacement and the ability to pay for capital investment out of future reduced energy costs. He perceives that as a tough sell, especially if dealing with corporations that must answer to stockholders.
2. Skip Ernst (Daikin Applied) commented that, "If they already had acceptable paybacks, they would have already done them", and that "Most companies can get a better return on investment by being more efficient in their operations than by saving energy."
3. Rick Danks (ASHRAE) voiced concern about trying to sell "this" on improved health and safety. He sees energy efficiency as a competing priority with health and safety. Given that there are limited funds, he "struggles to find a way to sell that". His point is that "you can't make all three come true."
4. Skip Ernst (Daikin Applied) commented that it is very difficult to replace equipment until it becomes a maintenance issue as it is not deemed cost effective.
5. Don Langston (Aire Rite) and Bob Sundberg (BNB Consulting) clarified that there are a lot of steps to be done within the HVAC portfolio buckets before incentive/rebate funds are released.
6. Don Langston (Aire Rite) commented that modeling through DEER makes a lot of assumptions. The bottom line is that "field measurements, or looking at other established industry sources through ASHRAE and other organizations, seem to lose their way through the maze as they go to Sacramento". This is his opinion "looking through a keyhole".
7. Skip Ernst (Daikin Applied) confirmed that there is already compliant equipment that applies to Federal requirements for unitary equipment. IEER is commercial 6 ton or larger systems. It will be a Federal regulation in 2018 and 2019.
8. Don Langston (Aire Rite) commented that he likes Figure 1 (above) as a starting point, but would add a challenge on the right side for the bad assumption made that equipment put in previously was code compliant with a permit. He suggested adding a section under the "Code Compliance" box for "Assumption that Code Based", reminding that the code compliance rate has been verified as very low presently.